SEAS AT RISK

for the protection and restoration of the marine environment

OPEN TENDER - Wind-assisted ship propulsion (WASP) Global Scale Up

Terms of Reference

CONTEXT

Seas At Risk is participating in climate negotiation on shipping decarbonisation at the International Maritime Organization and also at a European level. Both at the international and European level, a lot of work has been undertaken on alternative marine fuels for the transition of shipping to a zero emission sector by 2050. However, it has been challenging to have wind propulsion considered as a possible substitute for a large portion of fuel. Part of this resistance from policy makers and sometimes the shipping industry comes from the fact that data is lacking on how much propulsion/energy retrofitted commercial wind assist vessels as well as new-built primary wind vessels can achieve.

Following the publication of Wind First!, which demonstrated the technical and financial viability of wind-assisted ship propulsion (WASP) on selected routes and vessel types, there is now a pressing need to assess wind propulsion's scalability across the global fleet.

This follow-up study will move from route-specific analysis to fleet-wide modelling, quantifying how much propulsion energy could realistically be derived from wind if scaled across multiple segments and geographies. A key aim is to evaluate whether WASP can contribute significantly to the IMO's 5% zero or near-zero (ZNZ) energy target by 2030, and support deeper emissions cuts through 2040 and 2050.

The study will also explore the capacity and opportunity for shipyards in Small Island Developing States (SIDS) and Least Developed Countries (LDCs) to participate in global retrofit efforts an essential dimension for a just and equitable energy transition in maritime.

OBJECTIVES

- Quantify the global retrofit potential for WASP across vessel types and time horizons (2030, 2040, 2050)
- Model the impact of scaling up WASP on propulsion energy savings, fuel use, and GHG emissions
- Identify installation bottlenecks: shipyard capacity, production ramp-up, financing, and fleet turnover

- Explore how SIDS and LDC shipyards can contribute to WASP retrofitting and manufacturing, and what they would need (skills, finance, infrastructure)
- Support evidence-based advocacy for wind propulsion as a key enabler of short- and long-term decarbonisation goals at the IMO and EU level

TARGET AUDIENCES

Primary: Policy-makers at the International Maritime Organization whose primary file is the decarbonization of the shipping industry.

Secondary: European Union Policy makers whose primary file is Fuel EU Maritime Regulation.

KEY QUESTIONS TO ADDRESS

- What is the realistic technical and logistical potential for WASP retrofits across the global fleet?
- What share of the current fleet (by segment) can be feasibly retrofitted by 2030, 2040, and 2050?
- How many ships can be retrofitted by 2040 and 2050, given manufacturing and installation capacity?
- What is the maximum annual retrofit rate per segment?
- How does fleet turnover, including scrapping and newbuilds, affect the achievable uptake?
- What is the potential role of global shipyards particularly in SIDS and LDCs in scaling WASP retrofits?
- What is their current capacity for retrofit work and component manufacturing?
- What would they need in terms of training, infrastructure investment, and technology partnerships?
- How can participation in this transition create local employment and green economic development?
- What is the emissions reduction potential of large-scale WASP deployment?
- What energy savings and GHG reductions would result under conservative, accelerated, and regulatory-push scenarios?
- How much of the IMO's 2030, 2040, and 2050 decarbonisation targets could be achieved through WASP alone?

SCOPE OF WORK & DELIVERABLES

SEAS AT RISK

for the protection and restoration of the marine environment

Task 1 – Global Fleet & Yard Capacity Assessment

- Map global fleet by vessel segment, age, operating profile, and retrofit suitability
- Identify candidate ships for retrofitting by decade
- Map current and potential shipyard capacity, especially in SIDS/LDCs

Task 2 – Retrofit Uptake Scenarios

- Develop at least three global retrofit deployment scenarios:
- Conservative (market-driven)
- Accelerated (industry-led)
- Regulatory push (policy-supported)
- Estimate retrofits/year, cumulative energy savings, emissions reduction, and total addressable market

Task 3 – Economic Implications

- Model impact ZNZ energy uptake

Task 4 – Capacity Development in SIDS/LDCs

- Identify key SIDS/LDCs with infrastructure potential
- Estimate training needs, capital requirements, and capacity-building pathways
- Highlight co-benefits: job creation, green skills, and technology transfer

DELIVERABLES

Service & deliverables	**Date**
Task 1- Develop a comprehensive mapping of the global shipping fleet, categorised by vessel segment, age, operating profile, and retrofit suitability. It will also identify which vessels are most likely to be eligible for retrofitting across each decade (to 2030, 2040, and 2050). In parallel, the study will assess current and potential shipyard capacity worldwide, with a particular focus on opportunities for SIDS and LDCs to participate in retrofit and manufacturing activities.	**June 2025**
Task 2- Model at least three retrofit deployment scenarios: • Aconservative scenario based on market-driven uptake, • An accelerated industry-led scenario • A regulatory-push scenario based on strong policy support.	**July 2025**

For each scenario, the study will estimate the number of retrofits achievable per year, the cumulative energy and emissions savings, and the overall market size and addressable fleet potentia	
Task 3 - Quantify the contribution of scaled wind propulsion to zero or near-zero (ZNZ) energy uptake across the global fleet.	**Aug 2025**
Task 4 - Identify key Small Island Developing States (SIDS) and Least Developed Countries (LDCs) with infrastructure and human capital potential to support WASP retrofits and manufacturing. It will estimate the investment needed in training, infrastructure, and institutional capacity, and highlight co-benefits such as job creation, technology transfer, and the development of green maritime skills in these regions.	**Aug 2025**

Submit your letter of interest and quote to secretariat@seas-at-risk.org, by Monday 11th of August.